IN THE CLAIMS:

Please cancel Claims 4 and 9 and amend the claims as shown below. The claims, as pending in the subject application, read as follows:

1. (Currently Amended) An arbitrator for reordering access requests to a memory system to reduce memory system conflicts, said arbitrator ~~comprises~~ comprising:

a transaction buffer for buffering said access requests;

an input counter for counting access requests received by said arbitrator,

an output counter for counting access requests issued by said arbitrator;

a mapping table for mapping ~~at least said~~ said input counter and said output counter to ~~said access requests~~ respective locations in said transaction buffer; and

a reordering ~~means~~ unit for dynamically re-ordering entries in said mapping table such that ~~said~~ the mapping of said output counter points to said access requests in an issue order wherein memory system conflicts are reduced, wherein the mapping of said input counter maps to the location in said transaction buffer that is to be filled by a next received access request, and wherein said locations in said transaction buffer are filled in the order that access requests issued from said locations.

2. (Currently Amended) An arbitrator for reordering access requests to a memory system to reduce memory system conflicts, said arbitrator comprising:

a transaction buffer for buffering said access requests;

an output counter for counting access requests issued by said arbitrator;

a mapping table for mapping at least output counter values to locations in said transaction buffer; and

a reordering unit for dynamically re-ordering entries in said mapping table such that the mapping of said output counter points to said access requests in an issue order wherein memory system conflicts are reduced, ~~The arbitrator as claimed in claim 1,~~ wherein said reordering ~~means~~ unit comprises:

a conflict detector circuit for detecting memory system conflicts between one or more issued access requests and said access requests in said transaction buffer;

a selection means unit for selecting a next conflict-free access request in input order; and

a mapping table update circuit for re-ordering said entries in said mapping table based on said next conflict-free access request in input order.

3. (Original) The arbitrator as claimed in claim 2, wherein said arbitrator further comprises:

a queue position register for recording said input order.

4. (Canceled)

5. (Original) The arbitrator as claimed in claim 1, wherein said mapping table is a hash table.

6. (Currently Amended) An arbitration method of reordering access requests to a memory system to reduce memory system conflicts, said method comprising:

(a) buffering said access requests in a transaction buffer;

(b) maintaining a mapping table, said mapping table mapping ~~at least~~ an input counter and an output counter to ~~said access requests~~ locations in said transaction buffer; ~~and~~

(c) dynamically re-ordering entries in said mapping table such that said mapping of said output counter points to said access requests in an issue order wherein memory system conflicts are reduced;

(d) counting access requests received by said arbitrator using said input counter; and

(e) placing a next received access request in said transaction buffer at a buffer location pointed to by the mapping of said input counter.

7. (Currently Amended) An arbitration method for reordering access requests to a memory system to reduce memory system conflicts, said method comprising:

(a) buffering said access requests in a transaction buffer;

(b) maintaining a mapping table, said mapping table mapping at least an output counter to locations in said transaction buffer; and

(c) dynamically re-ordering entries in said mapping table such that said mapping of said output counter points to said access requests in an issue order wherein memory system conflicts are reduced;

~~The method as claimed in claim 6,~~ wherein step (c) comprises the sub-steps of:

(c1) detecting memory system conflicts between one or more issued access requests and said access requests in said transaction buffer;

(c2) selecting a next conflict-free access request in input order; and

(c3) re-ordering said entries in said mapping table based on said next conflict-free access request in input order.

8. (Original) The method as claimed in claim 7, wherein said method comprises the further steps of:

(d) maintaining a queue position register, said queue position register recording said input order.

9. (Canceled)

10. (Original) The arbitration method as claimed in claim 6, wherein said mapping table is a hash table.